CLAIMS SHOWING CHANGES

1   1. (thrice amended) A routing system for distributing packets in a network, wherein the

2   packets originate at a source and are returned to a destination, both source and destination

3   external with respect to the routing system, comprising:

4   a plurality of means for transferring packets to a destination and from a source;

5   a plurality of route processing engines; and

6   a mechanism that performs a hashing function on at least a portion of network

7   layer information, in the packets transferred to the routing system, to determine an ap-

8   proximately even distribution of the packets to the route processing engines for process-

9   ing by the engines;; and

10   means for determining packets belonging to a same flow; and their

11   means for determining the original order of the packets in the same flow from the

12   network layer information of the packets, the network layer information including at least

13   the same source/destination and protocol;;

14   means for preserving the original ordered packet flows by sending each ordered

15   packet flow to a single route processing engine.

1   2. (thrice amended) The routing system of claim 1, wherein the plurality of means for

2   transferring packets includes at least one uplink connection to an external network and at

3   least one data port adapter connected to an external data interface component, wherein

4   the port adapter converts input data to a known interface, and the external interface com-

5   ponent accepts input data.

1   11. (thrice amended) A routing system for distributing packets in a network, wherein the

2   packets originate at a source and are returned to a destination, both source and destination

3   external with respect to the routing system, comprising:

4   a plurality of network interfaces that transfer the packets to a destination and from

5   a source;

6   a plurality of route processing engines;

7   a fabric interconnecting said plurality of network interfaces and said plurality of

8   route processing engines;

9   wherein each of said plurality of network interfaces uses a hashing function to

10 determine a distribution of the packets among said plurality of route processing engines;

11 and

12   wherein the hashing function is carried out on at least a portion of network layer

13 information in the packets,; and

14   wherein the hashing function determines packets belonging to a same flow,; and

15 their

16   wherein the hashing function determines the packets' original order from the net-

17 work layer information including at least the same source/destination and protocol,; and

18   means for preserving the original ordered packet flow by sending the original or-

19 dered packet flow to a single route processing engine.

1   15. (twice amended) The routing system of claim 11, wherein said network interfaces

2   include port adapters, wherein the port adapter converts input data to a known interface.

1 16. (twice amended) The routing system of claim 15, wherein said network interfaces

2 include at least one uplink connection to an external network, wherein the port adapter

3 converts input data to a known interface.

1 20. (twice amended) The method of claim 17 , wherein the ~~hash value~~ hashing is com-

2 puted by logically XORing the addresses, the port, and the protocol type value.

1 25. (twice amended) The method of claim 17, wherein the at least one ~~original~~ ordered

2 packet flow comprises a plurality of ~~original~~ ordered packet flows, and the step of hash-

3 ing is performed such that only a single respective processing engine is selected to proc-

4 ess respective packets belonging to a respective ~~original~~ ordered packet flow.

1 29. (amended) The system of claim ~~28~~ 26, wherein the hash value is computed by logi-

2 cally XORing the addresses, the ports, and the protocol type value.

1 30. (amended) The system of claim ~~28~~ 26 further comprising:

2   means for providing a table containing entries for use in selecting the one proc-

3 essing engine; and

4   means for selecting one entry in the table specified by an index value, the index

5 value being based upon the hash value.